

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-22 (Canceled).

Claim 23 (New): A system for absorbing an impact to a motor vehicle comprising:

 a bumper beam;

 a bumper facia; and

 a hollow impact absorbing member interposed between said bumper beam and said bumper facia comprising:

 a first wall disposed against said bumper beam;

 a second wall disposed against said bumper facia, said first wall is spaced from said second wall to define a hollow space;

 said hollow space is further defined by a peripheral wall extending from peripheral edges of said first and second wall;

 a first plurality of concave ribs extending from said first wall into said hollow space towards said second wall and is proximal to said second wall whereby said first plurality of concave ribs occupies a portion of said hollow space;

 a second plurality of concave ribs extending from said second wall into said hollow space towards said first wall and is proximal to said first wall whereby said second plurality of concave ribs occupies a portion of said hollow space; and

 a weld surface supported by said first plurality of concave ribs in one direction and supported by said second plurality of concave ribs in another direction.

Claim 24 (New): The hollow impact absorbing member of claim 23 further comprising a first plate-like rib extending into said hollow space from said first wall towards said second wall; a

second plate-like rib extending into said hollow space from said second wall towards said first wall; and said first and second plate-like ribs are integrally welded to each other whereby said hollow space is partitioned.

Claim 25 (New): The hollow impact absorbing member of claim 24, wherein said first and second plate-like rib are terminated with at least one concave rib.

Claim 26 (New): The hollow impact absorbing member of claim 25 further comprising a first connection rib interposed between a pair of said first concave ribs.

Claim 27 (New): The hollow impact absorbing member of claim 26 further comprising a second connection rib interposed between a pair of said second concave ribs.

Claim 28 (New): The hollow impact absorbing member of claim 26 wherein said first connection rib forms a protrusion in said hollow space having a depth between 3.0 and 8.0 mm.

Claim 29 (New): The hollow impact absorbing member of claim 28, wherein said first connection rib has a cross section selected from a group of shapes consisting of: a “C”, a “V” and a plate.

Claim 30 (New): The hollow impact absorbing member of claim 26, wherein said first concave rib and first connection rib are arranged on a first virtual straight line.

Claim 31 (New): The hollow impact absorbing member of claim 30, wherein said first virtual straight line has an angle within a range between 30 degrees and 60 degrees with respect to a horizontal line.

Claim 32 (New): The hollow impact absorbing member of claim 27, wherein said second concave and second connection rib are arranged on a second virtual straight line

Claim 33 (New): The hollow impact absorbing member in claim 23, further comprises a first height from said first wall to said weld surface, wherein said first height is between 15.0 and 35.0 mm; a second height from the said second wall to said weld surface, wherein said height second height is between 15.0 and 35.0 mm; and a third height from said first wall to said second wall, wherein said third height is between 30.0 and 70.0 mm.

Claim 34 (New): The hollow impact absorbing member of claim 23, wherein said concave rib forms a frustum of a cone having a major diameter between 15.0 and 30.0 mm and a minor diameter between 5.0 and 15.0 mm, whereby said minor diameter of said concave rib is positioned in said hollow space.

Claim 35 (New): A system for absorbing an impact to a motor vehicle comprising:
a bumper beam;
a bumper facia; and
a hollow impact absorbing member interposed between said bumper beam and said bumper facia comprising:
a first wall abutting said bumper beam;
a second wall abutting said bumper facia, said first wall is spaced from said second wall to define a hollow space;
said hollow space is further defined by a peripheral wall extending from peripheral edges of said first and second wall;

a separating structure spaced between said first wall and said second wall, whereby said hollow space defined by said first and second wall resists deformation when an impact energy is applied; and

a supporting structure abutting at least two of said separating structure, whereby said supporting structure limits deformation of said separating structure when an impact energy is applied.

Claim 36 (New): The hollow impact absorbing member of claim 35, wherein said supporting structure comprises a first fused portion of said first wall extending into said hollow space towards said second wall and a second fused portion of said second wall extending into said hollow space towards said first wall.

Claim 37 (New): The hollow impact absorbing member of claim 35, wherein said supporting structure comprises a first folded portion of said first wall extending into said hollow space toward said second wall and a second folded portion of said second wall extending into said hollow space toward said first wall.

Claim 38 (New): The hollow impact absorbing member of claim 35 further comprising a reinforcing core material deposited within said supporting structure.

Claim 39 (New): The hollow impact absorbing member of claim 38, wherein said reinforcing core material is plastic.

Claim 40 (New): The hollow impact absorbing member of claim 38, wherein said reinforcing core material is metal.

Claim 41 (New): A method for absorbing an impact to a motor vehicle comprising:
interposing a hollow impact absorbing member between a bumper beam and a bumper
fascia;
separating a first wall of said hollow impact absorbing member from a second wall of
said hollow impact absorbing member at a distance with a plurality of concave ribs;
stabilizing a portion of said plurality of concave ribs with a plurality of plate-like ribs;

Claim 42 (New): The method of claim 41 further comprising depositing a reinforcement material
within said plurality of plate-like ribs.

Claim 43 (New): The method of claim 41 further comprising interspersing a plurality of
connection ribs between said plurality of concave ribs and arranging said plurality of connection
ribs and said plurality of concave ribs on plurality of virtual lines orientated 30 to 60 degrees
from horizontal.